

PENT COOPERATION TREATY

Rec'd PCT/PTO 25 JUN 2004

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 2601959/VPA/lS	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/AU02/01768	International filing date (day/month/year) 30 December 2002	(Earliest) Priority Date (day/month/year) 28 December 2001
Applicant DELTA BIOTECHNOLOGY LIMITED et al		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:
 - contained in the international application in written form.
 - filed together with the international application in computer readable form.
 - furnished subsequently to this Authority in written form.
 - furnished subsequently to this Authority in computer readable form.
 - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. Certain claims were found unsearchable (See Box I).

3. Unity of invention is lacking (See Box II).

4. With regard to the title,

- the text is approved as submitted by the applicant.
- the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- the text is approved as submitted by the applicant
- the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

- as suggested by the applicant.
- because the applicant failed to suggest a figure
- because this figure better characterizes the invention

None of the figures

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Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos :

because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos : 30

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

Claim 30, which is to an "antigen-binding molecule that is specifically interactive" with a polypeptide as depicted by SEQ ID NO: 2. It is considered that claim 30 is not limited to the technical features of the invention (Rule 6 PCT) in that it extends to "antigen binding molecules" not provided for by the present invention.

3. Claims Nos :

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

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A. CLASSIFICATION OF SUBJECT MATTER		
Int. Cl. ^{1:} C12N 1/20		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) See "electronic data base" box below		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched See "electronic data base" box below		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPIDS, CA, MEDLINE: bordetella, pertussis, vaccin?, aro#, dehydroquinase, 3-dehydroquinase ANGIS, DGENE: SEQ ID NOS. 1, 2, 3		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	McARTHUR, J.D. et al., "An aromatic amino acid auxotrophic mutant of <i>Bordetella bronchiseptica</i> is attenuated and immunogenic in a mouse model of infection", FEMS Microbiol. Lett., Vol. 221, 2003, pages 7-16 entire document	1-41
A	ROBERTS, M. et al., "Construction and Characterization In Vivo of <i>Bordetella pertussis aroA</i> Mutants", Infect. Immun., Vol. 58, No. 3, March 1990, pages 732-739 entire document	1-41
A	EP 0 400 958 B1 (THE WELLCOME FOUNDATION LIMITED ET AL.) 13 September 1995 See page 3, paragraphs 5 and 7 etc.	1-41
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C		<input checked="" type="checkbox"/> See patent family annex
<p>* Special categories of cited documents:</p> <p>"V" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>		
Date of the actual completion of the international search 5 June 2003	Date of mailing of the international search report 19 JUN 2003	
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized officer JAMIE TURNER Telephone No : (02) 6283 2071	

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 574 466 B1 (THE WELLCOME FOUNDATION) 19 May 1999 See page 2, paragraphs 8 and 9 etc	1-41
X	EP 1 108 790 A2 (KYOWA HAKKO KOGYO CO. LTD.) 20 June 2001 SEQ ID NO: 6936 shares 42% identity with SEQ ID NO: 2 as claimed	21, 23, 24
X	AU 709385 B1 (KYUSHU UNIVERSITY) 26 August 1999 SEQ ID NO: 1 shares 100% identity with both SEQ ID NO: 1 and 3 as claimed	16-20, 27-30

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report			Patent Family Member				
EP	400958	JP	3117481	US	5527529	US	5851519
EP	574466	AU	13508/92	CZ	9301005	FI	933757
		HU	66833	NO	932423	PL	296702
		US	5547664	US	5683700	WO	9215688
		WO	9215689				
EP	1108790	JP	2002191370	US	2002197605		
AU	709385	FR	2779739	JP	11346774	US	2002108139

END OF ANNEX